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does not appear to be any great use in making it pass both ways, confining its course to the first mentioned direction, would alone render half the number of pipes and cocks unnecessary. The method of placing the doors for putting in the malt seems not well contrived: if an erect position would do equally well for the infusing vessel, a single door at the top would be kept tight easier, and be much more convenient; and as to the inclined position in which this vessel is represented in the drawing, which accompanies the specification, its utility cannot be imagined, as the patentee has neglected to point it out, or give any hint which might enable us to conjecture what it might be.

To give any decided opinion as to the advantage of this new process for brewing, would be premature, before its actual success has been experienced, but at least it may be allowed to commend the ingenuity of its contrivance, and to declare that it seems very likely to have all the advantages pointed out by the patentee, and therefore highly to merit a fair trial: to apply the same process to hops, requires some caution, as it is the opinion of some men of experience, that a simple infusion of the hops in hot water, without boiling them, would give the liquor the best flavour: and if we may reason from what occurs in the management of tea, of which the simple infusion is so pleasing, while the boiled liquor from it is nauseous, it is highly probable that this opinion is well founded.

Patent of Mr. Stephen, Hooper, of Walworth (near London) for a thermometer, for ascertaining the heat of Bakers' ovens and for other purposes

The principle of this instrument (which is the same as that of other metallic thermometers) may be variously applied; but the mode preferred by the patentee, consists of a brass tube equal in length to the oven, and about an inch and quarter in diameter; into this a rod of fir or other straight grained wood, is introduced, nearly of the same length as the brass tube, without sticking. The tube and rod are fastened to each other at one end, so that if any expansion or contraction take place in the brass tube through change of temperature, that change will be indicated at the other end by comparing the length of the tube with that of the rod, which has a scale fixed to it for that purpose, but as the divisions are too minute to be well discerned on a simple scale, the patentee prefers one made to multiply the space of the changes, by a lever, a combination of levers, or by a rack and pinion, according to the methods usual for pyrometers; the particular method which he uses, is to affix a rack to the end of the brass tube, and cause the rack to turn a small pinion, and to place on the axis of the pinion, a hand or index, which points the degree of expansion or heat, upon a circular plate properly divided. The pinion and the plate in which the axis of the pinion and the plate in which the axis of the pinion turns, are affixed to the wooden rod

For applying this thermometer to use, a channel or hole is made in the brick work of the oven, about six inches below and parallel to the bottom of the oven, extending from the mouth to the farther end, in such a manner, that a vertical plane passing through this channel, would nearly bisect the oven and door. The thermometer is introduced into this channel, leaving the index end exposed to view below the door of the oven. The channel or hole may be also made in any other convenient part of the oven, but the patentee seems to prefer that above mentioned.

Farther account of the bells moved by De Luc's electric Column.

The bells before noticed, are stated in the 150th No of the Philosophical Journal, to have been ringing on the 24th of August, and to be as likely to continue their motion as at first; they have now moved incessantly for 152 days.

To this account, a request is now added that if any mechanical gentleman knows a good method, by which a vibrating pendulum can give motion to wheel work, he may communicate it: as it is much wished that an instrument may be made, which by the motion of an index hand and dial plate, may show the number of vibrations in a given time, caused by the electric column.

Of extracting a liquid Sugar from Apples and Pears, by Mr Dubuc, manufacturing Chemist at Rouen.

Annales de Chemie.

The high price of Sugar on the continent has induced Prous, Parmentier, Cadet de Vaux, and other chemists, to investigate methods of obtaining it from various substances, and they have published processes more complicated, for obtaining it from grapes, apples and pears.

Several establishments having been formed in the south of France for making sugar from grapes, M. Dubuc wished that its northern extremity should have a similar advantage, and the excellent preserve, which has been made of apples and pears in that country for time immemorial, convinced him that the sugar prepared from them would be equal in quality, to that procured from grapes, and induced him to make experiments on them for that purpose.

First Experiment.

Eight *litres* or quarts, of the juice of very ripe apples, called *d'Orange*, were boiled in a copper bason, or boiler, for about a quarter of an hour, and then ten drachms or grammes of finely powdered chalk, were added to it, in four separate portions, two minutes after each other, in order to neutralize the acid in the juice: this substance occasioned a fermentation or effervescence in the juice. The boiling was then continued for eight or ten minutes, and the juice was kept stirred, in order to multiply the points of contact between it and the chalk: after this it was clarified in the following manner.

Three whites of eggs were beat up in three glasses of cold water, and whipped with a willow whisk, when the whites were well frothed, they were added at once to the juice, and well mixed by stirring it quickly with the same whisk; it was then left to boil for another quarter of an hour. The white of egg coagulates by being boiled, and collects all the impurities of the juice. After this the juice was strained through a flannel strainer supported at the four corners on a wooden frame.

It was then left to grow half cold, and again strained, in order to have it very clear and well clarified.

The juice only lost about one-third of its weight during these operations, what remained was reduced by boiling slowly, to about one half of its original bulk; the process was then finished without boiling until the syrup took, when cooled, a consistence like that of common treacle.

It may also be known to be properly prepared by a thick skin that may be observed at the surface of the liquid, or even by its specific gravity compared with that of water. A vessel which contains a quart, or two pounds of water, old French measure, ought to contain 2lb. 10 or 11 oz. of syrop, or liquid sugar. This last method is the best and most certain.

The above eight quarts of juice yielded near three pounds of liquid sugar, savoury, fresh, and which sweetens water very well, or even milk without curdling it (which the addition of the chalk prevents by neutralizing the acid, which would have this effect) so that it would be an advantageous substitute for treacle or sugar.

M. Dubuc gives an account of thirteen other experiments, which he made to obtain sugar from various species of apples and pears, of which our limits will not permit the recitation, the processes used in them did not however vary materially from that related, and the chief facts observed in them are contained in the following recapitulation of the experiments, inserted at the end of M. Dubuc paper.

Recapitulation.

1. Of the four ripe kinds of apples, which were used, it was found that the *orange* produced the most sugar, then came *Doux-levesque*, after them the *blanc mollet*, and lastly the *Girard.*

2. That a mixture of these four